



#6

## SEQUENCE LISTING

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<120> MONOCLONAL ANTIBODIES TO THE CLFA PROTEIN . . .

<130> P07069US04/BAS

<140> 10/056,052

<141> 2002-01-28

<150> 60/308,116

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<150> 60/274,611

<151> 2001-03-12

<150> 60/264,072

<151> 2001-01-26

<160> 20

<170> PatentIn version 3.1

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<212> DNA

<213> Staphylococcus aureus

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tcaaactacta ataatggcga aacgagtgtg gcgcaaaatc cagcacaaca ggaaacgaca 180

caatcatcat caacaaatgc aactacggaa gaaacgccgg taactggtga agctactact 240

acgacaacga atcaagctaa tacaccggca acaactcaat caagcaatac aaatgcggag 300

gaattagtga atcaacaag taatgaaacg acttttaatg atactaatac agtatcatct 360

gtaaattcac ctcaaaattc tacaaatgcg gaaaatgttt caacaacgca agataacttca 420

actgaagcaa caccttcaaa caatgaatca gctccacaga gtacagatgc aagtaataaa 480

gatgtagtga atcaagcggg taatacaagt gcgcctagaa tgagagcatt tagtttagcg 540

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gaccctgaaa atgttaaaaa gacaggtaat gtgacattgg ctactggcat aggtagtaca 960  
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Asn Val Ser Asp Thr Lys Thr Ser Ser Asn Thr Asn Asn Gly Glu Thr  
35 40 45

Ser Val Ala Gln Asn Pro Ala Gln Gln Glu Thr Thr Gln Ser Ser Ser  
50 55 60

Thr Asn Ala Thr Thr Glu Glu Thr Pro Val Thr Gly Glu Ala Thr Thr  
65 70 75 80

Thr Thr Thr Asn Gln Ala Asn Thr Pro Ala Thr Thr Gln Ser Ser Asn  
85 90 95

Thr Asn Ala Glu Glu Leu Val Asn Gln Thr Ser Asn Glu Thr Thr Phe  
100 105 110

Asn Asp Thr Asn Thr Val Ser Ser Val Asn Ser Pro Gln Asn Ser Thr  
115 120 125

Asn Ala Glu Asn Val Ser Thr Thr Gln Asp Thr Ser Thr Glu Ala Thr  
130 135 140

Pro Ser Asn Asn Glu Ser Ala Pro Gln Ser Thr Asp Ala Ser Asn Lys  
145 150 155 160

Asp Val Val Asn Gln Ala Val Asn Thr Ser Ala Pro Arg Met Arg Ala  
165 170 175

Phe Ser Leu Ala Ala Val Ala Ala Asp Ala Pro Ala Ala Gly Thr Asp  
180 185 190

Ile Thr Asn Gln Leu Thr Asn Val Thr Val Gly Ile Asp Ser Gly Thr  
195 200 205

Thr Val Tyr Pro His Gln Ala Gly Tyr Val Lys Leu Asn Tyr Gly Phe  
210 215 220

Ser Val Pro Asn Ser Ala Val Lys Gly Asp Thr Phe Lys Ile Thr Val  
225 230 235 240

Pro Lys Glu Leu Asn Leu Asn Gly Val Thr Ser Thr Ala Lys Val Pro  
245 250 255

Pro Ile Met Ala Gly Asp Gln Val Leu Ala Asn Gly Val Ile Asp Ser  
260 265 270

Asp Gly Asn Val Ile Tyr Thr Phe Thr Asp Tyr Val Asn Thr Lys Asp  
275 280 285

Asp Val Lys Ala Thr Leu Thr Met Pro Ala Tyr Ile Asp Pro Glu Asn  
290 295 300

Val Lys Lys Thr Gly Asn Val Thr Leu Ala Thr Gly Ile Gly Ser Thr  
305 310 315 320

Thr Ala Asn Lys Thr Val Leu Val Asp Tyr Glu Lys Tyr Gly Lys Phe  
325 330 335

Tyr Asn Leu Ser Ile Lys Gly Thr Ile Asp Gln Ile Asp Lys Thr Asn  
340 345 350

Asn Thr Tyr Arg Gln Thr Ile Tyr Val Asn Pro Ser Gly Asp Asn Val  
355 360 365

Ile Ala Pro Val Leu Thr Gly Asn Leu Lys Pro Asn Thr Asp Ser Asn  
370 375 380

Ala Leu Ile Asp Gln Gln Asn Thr Ser Ile Lys Val Tyr Lys Val Asp  
385 390 395 400

Asn Ala Ala Asp Leu Ser Glu Ser Tyr Phe Val Asn Pro Glu Asn Phe  
405 410 415

Glu Asp Val Thr Asn Ser Val Asn Ile Thr Phe Pro Asn Pro Asn Gln  
420 425 430

Tyr Lys Val Glu Phe Asn Thr Pro Asp Asp Gln Ile Thr Thr Pro Tyr  
435 440 445

Ile Val Val Val Asn Gly His Ile Asp Pro Asn Ser Lys Gly Asp Leu  
450 455 460

Ala Leu Arg Ser Thr Leu Tyr Gly Tyr Asn Ser Asn Ile Ile Trp Arg  
465 470 475 480

Ser Met Ser Trp Asp Asn Glu Val Ala Phe Asn Asn Gly Ser Gly Ser  
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 <213> Staphylococcus aureus

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 tatggttttt cagtgcctaa ttctgctgtt aaaggtgaca cattcaaaat aactgtacct 180  
 aaagaattaa acttaaattg tgtaacttca actgctaaag tgccaccaat tatggctgga 240  
 gatcaagtat tggcaaattg tgtaatcgat agtgatggta atgttattta tacatttaca 300  
 gactatgtaa atactaaaga tgatgtaaaa gcaactttga ccatgcccgc ttatattgac 360  
 cctgaaaatg ttaaaaagac aggtaatgtg acattggcta ctggcatagg tagtacaaca 420  
 gcaaacaaaa cagtattagt agattatgaa aaatatggta agttttataa cttatctatt 480  
 aaaggtacaa ttgaccaaatt cgataaaaaca aataatacgt atcgtcagac aatttatgtc 540  
 aatccaagtg gagataacgt tattgcgccg gttttaacag gtaatttaaa accaaatacg 600  
 gatagtaatg cattaataga tcagcaaaat acaagtatta aagtatataa agtagataat 660  
 gcagctgatt tatctgaaag ttactttgtg aatccagaaa actttgagga tgtcactaat 720  
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 gatcaaatta caacaccgta tatagtagtt gttaatggtc atattgatcc gaatagcaaa 840  
 ggtgatttag ctttacgttc aactttatat ggggtataact cgaatataat ttggcgctct 900  
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 <212> PRT  
 <213> Staphylococcus aureus

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Leu Thr Asn Val Thr Val Gly Ile Asp Ser Gly Thr Thr Val Tyr Pro  
 20 25 30

His Gln Ala Gly Tyr Val Lys Leu Asn Tyr Gly Phe Ser Val Pro Asn

35

40

45

Ser Ala Val Lys Gly Asp Thr Phe Lys Ile Thr Val Pro Lys Glu Leu  
50 55 60

Asn Leu Asn Gly Val Thr Ser Thr Ala Lys Val Pro Pro Ile Met Ala  
65 70 75 80

Gly Asp Gln Val Leu Ala Asn Gly Val Ile Asp Ser Asp Gly Asn Val  
85 90 95

Ile Tyr Thr Phe Thr Asp Tyr Val Asn Thr Lys Asp Asp Val Lys Ala  
100 105 110

Thr Leu Thr Met Pro Ala Tyr Ile Asp Pro Glu Asn Val Lys Lys Thr  
115 120 125

Gly Asn Val Thr Leu Ala Thr Gly Ile Gly Ser Thr Thr Ala Asn Lys  
130 135 140

Thr Val Leu Val Asp Tyr Glu Lys Tyr Gly Lys Phe Tyr Asn Leu Ser  
145 150 155 160

Ile Lys Gly Thr Ile Asp Gln Ile Asp Lys Thr Asn Asn Thr Tyr Arg  
165 170 175

Gln Thr Ile Tyr Val Asn Pro Ser Gly Asp Asn Val Ile Ala Pro Val  
180 185 190

Leu Thr Gly Asn Leu Lys Pro Asn Thr Asp Ser Asn Ala Leu Ile Asp  
195 200 205

Gln Gln Asn Thr Ser Ile Lys Val Tyr Lys Val Asp Asn Ala Ala Asp  
210 215 220

Leu Ser Glu Ser Tyr Phe Val Asn Pro Glu Asn Phe Glu Asp Val Thr  
225 230 235 240

Asn Ser Val Asn Ile Thr Phe Pro Asn Pro Asn Gln Tyr Lys Val Glu  
245 250 255

Phe Asn Thr Pro Asp Asp Gln Ile Thr Thr Pro Tyr Ile Val Val Val  
260 265 270

Asn Gly His Ile Asp Pro Asn Ser Lys Gly Asp Leu Ala Leu Arg Ser  
 275 280 285

Thr Leu Tyr Gly Tyr Asn Ser Asn Ile Ile Trp Arg Ser Met Ser Trp  
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Asp Asn Glu Val Ala Phe Asn Asn Gly Ser Gly Ser Gly Asp Gly Ile  
 305 310 315 320

Asp Lys Pro Val Val Pro Glu Gln Pro Asp Glu  
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<210> 5  
 <211> 336  
 <212> DNA  
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 tgggtaccagc agaaaccagg gcagtctcct aaactactga tctactgggc atccactagg 180  
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 cacacgttcg gagggggggac caagctggaa ataaaa 336

<210> 6  
 <211> 112  
 <212> PRT  
 <213> Staphylococcus aureus

<400> 6

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Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser  
 20 25 30

Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 35 40 45

Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val

50

55

60

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Asn Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys His Gln  
85 90 95

Tyr Leu Ser Ser His Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

&lt;210&gt; 7

&lt;211&gt; 354

&lt;212&gt; DNA

&lt;213&gt; Staphylococcus aureus

&lt;400&gt; 7

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acatgcactg tctctggatt ctcatatcc agatataata tacactgggt tcgccagcct 120

ccaggaaagg gtctggagtg gctgggaatg atatggggtg gtgaaaacac agactataat 180

tcagctctca aatccagact gagcatcagc aaggacaact ccaagagcca agttttctta 240

aaaatgaaca gtctgcaaac tgatgacaca gccatgtact actgtgccag cgcctactat 300

ggtaactcct ggtttgctta ctggggccag gggactctgg tcaactgtctc tgca 354

&lt;210&gt; 8

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; Staphylococcus aureus

&lt;400&gt; 8

Gln Val His Leu Lys Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln  
1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Arg Tyr  
20 25 30

Asn Ile His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu  
35 40 45

Gly Met Ile Trp Gly Gly Glu Asn Thr Asp Tyr Asn Ser Ala Leu Lys  
50 55 60



Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu  
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr Cys Ala  
85 90 95

Ser Ala Tyr Tyr Gly Asn Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 9  
<211> 336  
<212> DNA  
<213> Staphylococcus aureus

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tggtaccagc agaaaccagg gcagtctcct aaactgctga tctactgggc atccactagg 180  
gaatctggtg tccctgatcg cttcacaggc agtggatctg ggacagattt tactcttacc 240  
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<210> 10  
<211> 112  
<212> PRT  
<213> Staphylococcus aureus

<400> 10

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Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser  
20 25 30

Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
35 40 45

Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys His Gln  
85 90 95

Tyr Leu Ser Ser Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 11  
<211> 363  
<212> DNA  
<213> Staphylococcus aureus

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ccaggaaagg gtctggagtg gctgggaatg atatggggtg gtggaaacac agactataat 180  
tcagctctca aatccagact gagcatcagc aaggacaact ccaagagcca agttttctta 240  
aaaatgaaca gtctgcaaac tgatgacaca gccatgtatt actgtgccag aaaaggggaa 300  
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gca 363

<210> 12  
<211> 121  
<212> PRT  
<213> Staphylococcus aureus

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Ser Leu Ser Ile Thr Cys Ala Ile Ser Gly Phe Ser Leu Ser Arg Tyr  
20 25 30

Ser Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu  
35 40 45

Gly Met Ile Trp Gly Gly Gly Asn Thr Asp Tyr Asn Ser Ala Leu Lys

50

55

60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu  
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr Cys Ala  
85 90 95

Arg Lys Gly Glu Phe Tyr Tyr Gly Tyr Asp Gly Phe Val Tyr Trp Gly  
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala  
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<210> 13  
<211> 336  
<212> DNA  
<213> Staphylococcus aureus

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<210> 14  
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<213> Staphylococcus aureus

<400> 14

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Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
35 40 45

Ser Pro Thr Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys His Gln  
85 90 95

Tyr Leu Ser Ser Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 15  
<211> 354  
<212> DNA  
<213> Staphylococcus aureus

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ccaggaaagg gtctggagtg gctgggaatg atatgggggtg gtggaaacac agactataat 180  
tcagctctca aatccagact gagcatcacc aaggacaact ccaagagcca agttttctta 240  
aaaatgaaca gtctgcaaac tgatgacaca gccatgtact actgtgccac cgctactat 300  
ggtaactcct ggtttgctta ctggggccaa gggactctgg tcaactgtctc tgca 354

<210> 16  
<211> 118  
<212> PRT  
<213> Staphylococcus aureus

<400> 16

Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln  
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Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Arg Tyr  
20 25 30

Ser Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu  
35 40 45

Gly Met Ile Trp Gly Gly Gly Asn Thr Asp Tyr Asn Ser Ala Leu Lys  
50 55 60

Ser Arg Leu Ser Ile Thr Lys Asp Asn Ser Lys Ser Gln Val Phe Leu  
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr Cys Ala  
85 90 95

Thr Ala Tyr Tyr Gly Asn Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 17  
<211> 336  
<212> DNA  
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tggtaccagc agaaaccagg gcagtctcct aaactgctga tctactgggc atccactagg 180  
gaatctggtg tccctgatcg cttcagcggc agtggatctg ggacagattt tactcttacc 240  
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<210> 18  
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<400> 18

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
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Glu Arg Val Thr Met Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser  
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Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
35 40 45

Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys His Gln  
85 90 95

Tyr Leu Ser Ser Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 19  
<211> 363  
<212> DNA  
<213> Staphylococcus aureus

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tcagctctca aatccagact gagcatcagc aaagacaact ccaagaacca agttttctta 240  
aaaatgaaca gtctgaccgc cgctgacaca gccgtgtatt actgtgccag aaaaggggaa 300  
ttctactatg gttacgacgg gtttgtttac tggggccaag ggactctggt cactgtctct 360  
tcc 363

<210> 20  
<211> 121  
<212> PRT  
<213> Staphylococcus aureus

<400> 20

Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
1 5 10 15

Thr Leu Ser Ile Thr Cys Thr Ile Ser Gly Phe Ser Leu Ser Arg Tyr  
20 25 30

Ser Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu  
35 40 45

Gly Met Ile Trp Gly Gly Gly Asn Thr Asp Tyr Asn Ser Ala Leu Lys  
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Asn Gln Val Phe Leu  
65 70 75 80

Lys Met Asn Ser Leu Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Arg Lys Gly Glu Phe Tyr Tyr Gly Tyr Asp Gly Phe Val Tyr Trp Gly  
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120